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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/695,187   | 10/28/2003  | William C. Weigler   | IS01207AP           | 4286             |
| 22917  | 7590        | 06/10/2005           | EXAMINER            |                  |
| MOTOROLA, INC.<br>1303 EAST ALGONQUIN ROAD<br>IL01/3RD<br>SCHAUMBURG, IL 60196 |             |                      | JOHNSON, JONATHAN J |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 1725                |                  |

DATE MAILED: 06/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/695,187             | WEIGLER ET AL.      |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Jonathan Johnson       | 1725                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 28 October 2003.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 15-20 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-14 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) 1-20 are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10-28-03</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-14 are drawn to a method of desoldering, classified in class 228, subclass 264.
- II. Claims 15-20 are drawn to a desoldering apparatus, classified in class 156, subclass various.

The inventions are distinct, each from the other because of the following reasons:

Inventions Group II and Group I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be used in removal of adhesives.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

During a telephone conversation with Tom Miller on 6-1-05 a provisional election was made with traverse to prosecute the invention of group I, claims 1-14. Affirmation of this election must be made by applicant in replying to this Office action. Claims 15-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 3580462 (Reynolds) in view of US 5,143,272 (Carломанго). Reynolds teaches providing a sacrificial circuit substrate with a single pad (figure 3, items 20 and 22), a portion of each pad having a solder-wettable material disposed thereon (figure 3, items 20 and 22); placing the pad of the sacrificial circuit substrate in vertical proximity to the excess solder of the circuit substrate (Figure 3, item 18); heating the excess solder to a liquidous state (figure 4, item 26); wicking the excess solder vertically onto the pad of the sacrificial circuit substrate (figure 3, item 22); and lifting the sacrificial circuit substrate from the proximity of the circuit substrate while the solder is in a liquidous state (figure 5, item 28); wherein the circuit substrate is flexible and wherein the providing step includes providing a rigid sacrificial circuit substrate (figure 1, item 18); heating step includes using hot gas to reflow the excess solder (figure 3, item 26); the pad including are plated with a solder-wettable material used as the wicking material (figure 3, item 3); wherein the dimensions of the pads, vias and through-holes are configured to leave a residual amount of solder on the circuit substrate after the wicking and lifting steps (figure 2, item 14); applying flux to the sacrificial circuit substrate. Carломанго teaches the use of a vacuum suction device at each point of removing excess solder (Figure 1, item 20). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Reynolds to

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utilize a vacuum suction point at each solder land in order to further assist in removing of excess solder (see Carlomango abstract).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 3580462 (Reynolds) and US 5,143,272 (Carломанго) as applied to claim 1 above and further in view of JP 52-42447 (MATU). Matu teaches applying flux in order to remove impurities and reduce surface tension imparted to the solder (abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Reynolds and Carlomango to utilize applying flux to the sacrificial circuit in order to reduce the impurities and the surface tension of the solder (Matu abstract).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 3580462 (Reynolds) and US 5,143,272 (Carломанго) as applied to claim 9 above and further in view of JP 52-42447 (MATU). Matu teaches applying flux in order to remove impurities and reduce surface tension imparted to the solder (abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Reynolds and Carlomango to utilize applying flux to the sacrificial circuit in order to reduce the impurities and the surface tension of the solder (Matu abstract).

### *Conclusion*

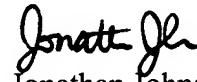
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Johnson whose telephone number is 571-272-1177. The examiner can normally be reached on M-Th 7:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on 571-272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jonathan Johnson  
Primary Examiner  
Art Unit 1725

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